

## **REMARKS**

Claims 1-5 were examined. Claims 1-5 are rejected. Applicants amend claims 1-5. Therefore, Applicants respectfully request reconsideration of pending Claims 1-5 as amended, in view of at least the following remarks.

### **I. Formal Matters**

The Patent Office objects to the specification because it is not arranged as required by 37 C.F.R. § 1.77 (b). In response, the Applicants amend the specification, and assert that the specification as amended complies with standards required by the U.S.P.T.O. Therefore, Applicants respectfully request that the Patent Office withdraw the objection to the specification noted above.

In addition, the Patent Office objects to the claims as including element numbers, which should be deleted. In response, Applicants have amended the claims to delete the element numbers. Thus, Applicants assert that the claims as amended comply with the requirements of the U.S.P.T.O. and request that the Patent Office withdraw the objection noted above.

### **II. Drawings**

The Patent office objects to the drawings because Figs. 6, 7, and 9 are labeled with a "K" instead of a "C". In response Applicants provide replacement sheets for Figs. 6, 7, and 9 having "C" instead of "K". Applicants assert that the replacement sheets are in compliance with the requirements of the U.S.P.T.O., and thus request that the Patent Office withdraw the objection to the drawings noted above.

### **III. Claims Rejected Under 35 U.S.C. § 112**

The Patent Office rejects Claims 1-5 under 35 U.S.C. § 112 second paragraph as being indefinite. Specifically, with respect to claim 1, there is insufficient antecedent basis for the limitation "power" in line 14. In response, Applicants amend claim 1 to include "the amount of energy having to be supplied". Applicants assert that claim 1, as

amended, complies with 35 U.S.C. § 112, and thus, request that the Patent Office withdraw the rejection of claim 1 identified above.

Next, claims 4-5 are rejected as being dependent from a multiple dependent claim. In response, Applicants amend claims 3 and 4 to depend from claim 1. Hence, Applicants assert that claims 3 - 5 are in compliance with 35 U.S.C. § 112, and respectfully request that the Patent Office withdraw the rejection of claims 4 and 5 identified above.

#### **IV. Claims Rejected Under 35 U.S.C. §102**

First, the Patent Office rejects Claims 1-5 under 35 U.S.C. § 102 (b) as being anticipated by Suzuki et al. ("Suzuki") (EP 0627206). It is axiomatic that to be anticipated every element of the claim must be disclosed within a single reference.

Applicants respectfully disagree with the rejection above and submit that independent claim 1 is allowable for at least the reason that Suzuki does not describe "means for numerically processing, point by point, a spatial temperature distribution in the target zone and its surroundings, in order to calculate temperature gradients," in accordance with Applicants' claim 1.

According to claim 1, for example, there may be a system that quickly obtains a desired temperature in a target zone and that maintains and controls the desired temperature with increased accuracy (cf. page 3 lines 15-22). For example, such a system may measure the spatial temperature distribution, calculate a temperature gradient, and depending on the calculated temperature gradient, control an amount of energy having to be supplied to the target zone to reach and maintain a predetermined temperature at the target zone. Specifically, the use of the spatial distribution to deduce temperature gradients makes it possible to estimate the amount of energy which must be applied with increased accuracy. Therefore, the invention makes it possible to increase temperature to reach the desired temperature more quickly and maintain the desired temperature of the biological tissue with greater stability (cf. page 4 lines 4-17). As a result, the present system presents capacities that are much more significant, in

particular thanks to the calculation of the gradient temperature, than the system described in the documents of Suzuki and Acker.

On the other hand, Suzuki relates to an ultrasound medical treatment apparatus utilizing an imaging device. The technical problem solved by Suzuki is a problem of ensuring that the heat treatment is realized at the intended portion of the patient's body (tumor tissue) and not at an unexpected portion of the body (normal tissues) (cf. page 2 lines 11-54). For example, in the system described in Suzuki, temperature distribution measurement means are used for measuring the spatial temperature distribution in order to obtain temperature increase point data (cf. page 4 lines 30-31). The temperature increase point data is obtained by measuring temperature distributions at different times (A, C and D) and by making operations on the three obtained measuring temperature distributions to predict the change due to temperature alone (cf. page 13 lines 36-50). Thus, Suzuki gives teachings as how to determine with good accuracy the position of the tumor point to be treated and how to prevent the displacement of said point from the focal point.

However, the Patent Office has not identified, and Applicants are unable to find, any description in Suzuki of means for numerically processing the spatial temperature distribution in order to calculate temperature gradients, as required by the limitation of claim 1 quoted above. Hence, Applicants respectfully request that the Patent Office withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b) as being anticipated by Suzuki for at least the reason identified above.

Applicants submit that dependent claims 2-5, being dependent upon allowable base claim 1, are patentable over Suzuki for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of dependent claims 2-5 under 35 USC § 102 as being as being anticipated by Suzuki.

Second, the Patent Office rejects Claims 1-5 under 35 U.S.C. § 102 (e) as being anticipated by Acker et al. ("Acker") (US 6,128,522). Again, it is axiomatic that to be anticipated every element of the claim must be disclosed within a single reference.

Applicants respectfully disagree with the rejection above and submit that independent claim 1 is allowable for at least the reason that Acker does not describe "means for numerically processing, point by point, a spatial temperature distribution in the target zone and its surroundings, in order to calculate temperature gradients," in accordance with Applicants' claim 1 (e.g., such as is described above with respect to claim 1 and Suzuki).

On the other hand, Acker relates to monitoring of intrabody therapy involving application energy to the body (e.g., a heat treatment of a target zone of biological tissues). The technical problem solved by Acker is a problem of determining the particular points where a heat treatment therapy has to be realized in tumor tissues (cf. page 2 lines 11-54). In the system described in Acker, the temperature is calculated at different point (test points) before and after application of doses of energy at each of said test points. Then, the computer calculates a calibration curve of applied energy versus temperature rise (cf. col. 17 lines 54-67 and col. 18 lines 1-17).

However, the Patent Office has not identified, and Applicants are unable to find, any description in Acker of means for numerically processing the spatial temperature distribution in order to calculate temperature gradients, as required by the limitation of claim 1 quoted above. Hence, Applicants respectfully request that the Patent Office withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(e) as being anticipated by Acker for at least the reason identified above.

Applicants submit that dependent claims 2-5, being dependent upon allowable base claim 1, are patentable over Acker for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of dependent claims 2-5 under 35 USC § 102 as being anticipated by Acker.

### CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.